

**Work Order ID 71948**

Thursday, July 14, 2011 9:51:02 AM



Page 1

Item ID: D205-634-041

Accept



Setup Start



Revision ID:

Stop



Item Name: Replacement Skidtube

Start Date: 7/14/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 7/29/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

Date: 7-07-14

Tooling:

Date:

Run Start



QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

Draw Nbr

Revision Nbr

D2580-041

Rev.D DEO-D1

100

0.00



DOCUMENT CONTROL

DC

Memo

0.00

Document Control

Photocopy D205-634 bluefile &amp; type labels per PPP D205-634-041 CHG004

*step 225*

110

0.00



BENDING MACHINE - SKIDTUBES

CNC Bend 1

Memo

0.00

CNC Delta 100 Bender

1-Bend as per program D2580.C on CNC Bender and Folio 16

2-Cut tubes as per Dwg. D2580

3- scribe batch# in aft end of tube

*1 Q BB 11/07/15*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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**NOTE:** Date & initial all entries

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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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120

0.00



Skidtubes

Memo

0.00

Skidtubes

1- Deburr ends and remove bending marks

2- Prepare tube for swaging as per QSI 002

130

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

①

B 11/07/26.

11-7-27

W/O:		WORK ORDER CHANGES					
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Required Date:	7/29/2011	Req'd Qty:	1.00	Customer:		
Reference:						

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QC:		Date:	SPC (Y/N):	Date:

Run	Start	
	Stop	

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
140		0.00							
	Skidtubes								
Skidtubes	<div>Memo</div> <div>1-Weld step D2576 as per Dwg. D2580 and QSI 004 A/R<input type="checkbox"/><input type="checkbox"/> Aluminum Rod</div> <div>2-Grind welds on step as per Dwg D2580</div> <div>3-Insert D4202-1 spacer, swage as per QSI002 and trim/ grind flush per QSI002 and dwg. Hold x-bolt with DT9701 Use tube expander 1/2 x17G to start expansion and finish with 1/2 x 18G to achieve dwg dimention.</div> <div>4-Drill holes for wearplates using DT 8217 &amp; DT8937 Open holes to 19/64". adjust stopper not to hit web.Deburr</div> <div>6-Drill pilot holes for aft cap using DT 8215Open holes to 0.208". Deburr</div> <div>7-Drill pilot holes for Tow ring using DT8091, open to .640"and Deburr</div>	0.00							
150	QC10- Inspect visual per QSI004- ground welds	0.00							
	QC								
Quality Control	<div>Memo</div>	0.00							

*MI15778 BE 11/07/27*

*BE 11/07/27*

*WELDED AIR MI15778 BE 11/07/27*

*BE 11/07/27*

*11.07.28 1*

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

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Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160  QC Quality Control	QC5- Inspect part completeness to step on W/O  Memo	0.00  0.00				<i>1</i>	<i>0</i>	<i>07</i>	<i>28</i>
170  HandFinish Hand Finishing	Pressure Wash per QSI005 4.3  Memo Re-alodine tube as per QSI 005 section 4.1.2.1 do not acid etch and leave fwd eap out of solution.	0.00  0.00							<i>1</i> <i>0</i> <i>11/08/02</i>
180  Powdercoat Powder Coating	White Gloss(Ref:4.3.5.1) per QSI005 4.3-Alum  Memo START TIME: <i>11:30</i> OVEN TEMPERATURE: <i>320 OF</i> FINISH TIME: <i>12:00</i>	0.00  0.00							<i>1</i> <i>0</i> <i>11/08/02</i>

*M 117745*

W/O:		WORK ORDER CHANGES					
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QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

190

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

1 0 2 1108/07

W/O:		WORK ORDER CHANGES					
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Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Customer:

Reference:

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Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/  
Work Center IDOperation  
DescriptionSet Up/  
Run Hours

Tool ID

Tool #

Plan  
CodeAccept  
QtyReject  
QtyReject  
NumberInsp.  
Stamp

200

0.00



HandFinish

Hand Finishing

Memo

0.00

1-Install inserts & wearplates & Gaskets as per Dwg. D2580. Use a drop of Sikaflex on insert holes before installing wearplates  
A/R ☐ ☐ ☐ Sikaflex-291 ☐ ☐ ☐ ☐ M117516  
Sikaflex expire date: 01/15

2-Coat D2594-3 O' rings with Petroleum Jelly and install on D2594-1 plugs as per Dwg D2580

3-Inspect for foreign object per QSI 024

4-Install 2855 Aft Cap as per Dwg D2580 and seal Fwd Step & Aft Cap with Sikaflex. Clean excess adhesive  
A/R ☐ ☐ ☐ Sikaflex-291 ☐ ☐ ☐ ☐ M117516  
Sikaflex expire date: 01/15

5-Wing Walk as per Dwg D2580 and QSI 005 4.4  
Batch: M118313

ix of m-211/08/04

W/O:		WORK ORDER CHANGES					
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Required Date: 7/29/2011 Req'd Qty: 1.00

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start

QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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210

QC5- Inspect part completeness to step on W/O

0.00



QC

Memo

0.00

Quality Control

Inspect Aft Cap, Fwd Step and Wing Walk of work to Current Step Inspect for Foreign objects per QSI 024

220

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and pack for shipping as per PPPD205-634-041

Location:

PPP Rev:

PAM2093

230

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

11-08-09  
11-08-8  
Q

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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Thursday, July 14, 2011 9:51:09 AM

Page 1

Work Order ID: 71948

Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 7/14/2011


Required Date: 7/29/2011

Start Qty: 1.00

Required Qty: 1.00


Comments: IPP Rev:N 02.08.28 FP was QC5 in Step 27; Added QC5 to Step 30  
KJ IPP Rev P 10.02.19  
per PAR09-043 EC verified by:DD  
IPP Rev: O 06.02.28 Added paperwork EC  
IPP Rev:P 07-07-09 SS Wearplates & Gaskets JLM IPP Rev:Q  
10.12.01 as per chg003 DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
---------------------------------	------------------------	---------------	-------------	---------------------	------------------	-----------------	--------------------	----------------	-------------	--------------	---------------	----------------	--------

D202-1  Spacer	<b>D2579</b>	Manufactured	No			140	Each	443.0000	20	20			
-------------------------------------------------------------------------------------------------------	--------------	--------------	----	--	--	-----	------	----------	----	----	--	--	--


Location	Loc Qty	Loc Code
LG002	443	
66929	106	
67129	196	
67308	1	
67430	140	

BE 11/07/27  
B 72199 \*20

D2580-1  205 Skidtube bent detail		Manufactured	No			110	Each	1.0000	1	1			
----------------------------------------------------------------------------------------------------------------------------	--	--------------	----	--	--	-----	------	--------	---	---	--	--	--

Location	Loc Qty	Loc Code
ST046	1	
70785	1	

BE 11/07/25  
B 72089 \*1

D2576-3  Step (maching detail)		Manufactured	No			140	Each	44.0000	1	1			
-------------------------------------------------------------------------------------------------------------------------	--	--------------	----	--	--	-----	------	---------	---	---	--	--	--

Location	Loc Qty	Loc Code
LG	44	
66156	44	

BE 11/07/27

W/O:		WORK ORDER CHANGES					
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Work Order ID: 71948

Parent Item: D205-634-041

Parent Item Name: Replacement Skidtube

Start Date: 7/14/2011

Required Date: 7/29/2011

Start Qty: 1.00

Required Qty: 1.00

D2855 Manufactured No 200 Each 41.0000 1 1



Cap



M-L 11/08/03

Location	Loc Qty	Loc Code
FP007	41	
53791	4	
65519	2	
65569	35	

AN3-5A Purchased No 200 Each 1,055.000 2 2



Bolt



IX  
M-L 11/08/03

Location	Loc Qty	Loc Code
ST350	1055	
115371	279	
117423	776	

AN960JD10L NAS1149D0332J Purchased No 200 Each 0.0000 2 2



Washer

M 117087



2x M-L 11/08/03

ALS7-1032-130 Purchased No 200 Each 1,075.000 50 50



Insert



M-L 11/08/03

Location	Loc Qty	Loc Code
ST282	1075	
117717	1075	

M 118386

50x

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Start Date: 7/14/2011

Required Date: 7/29/2011

Start Qty: 1.00

Required Qty: 1.00

AN3C4A Purchased No 200 Each 1,672.000 50 50



BOLT



m-l 11/08/03

Location Loc Qty Loc Code

ST350 1672

117313 2

117688 608

117795 ✓ 500

117872 22

118012 500

118112 40

AN960C10L NAS1149C0332 Purchased No 200 Each 0.0000 50 50

R



washer

D3566-13

Manufactured No

200 Each 21.0000 1 1



Gasket

m 118 306



50x

m-l 11/08/03

Location Loc Qty Loc Code

FP 20

69281 ✓ 20

FP014 1

68341 1

D3566-5 Manufactured No 200 Each 20.0000 1 1



Gasket



m-l 11/08/03

Location Loc Qty Loc Code

FP015 20

68961 ✓ 8

71601 ✓ 12

1x

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Shop Packet Print

Page 3

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Start Date: 7/14/2011

Required Date: 7/29/2011

Start Qty: 1.00

Required Qty: 1.00

D3566-1 Manufactured No 200 Each 32.0000 2 2



Gasket



m-l 11/08/03

Location Loc Qty Loc Code

FP011 30

70769 18

71580 ✓ 12

FP015 2

68924 2

2x

D3564-11 Manufactured No 200 Each 4.0000 1 1



Wearshoe



m-l 11/08/03

Location Loc Qty Loc Code

FP019 4

67591 ✓ 4

1x

D3564-13 Manufactured No 200 Each 22.0000 1 1



Wearshoe



m-l 11/08/03

Location Loc Qty Loc Code

FP016 11

69280 11

FP017 11

71594 ✓ 11

1x

D3564-9 Manufactured No 200 Each 9.0000 1 1



Wearshoe



m-l 11/08/03

Location Loc Qty Loc Code

FP019 9

67590 4

69943 ✓ 5

1x

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Start Date: 7/14/2011

Required Date: 7/29/2011

Start Qty: 1.00

Required Qty: 1.00

D3564-5

Manufactured No

200

Each

19.0000

1

1



Wearshoe

Location

Loc Qty

Loc Code

FG

2

34806

2

FP019

17

70864 ✓

17

D2594-3

Manufactured No

200

Each

780.0000

16

16



O-Ring, 205 Skidtube

Location

Loc Qty

Loc Code

FP-A

780

65518

54

66952 ✓

726

D2594-1

Manufactured No

200

Each

233.0000

16

16



Plug, 205 Skidtube

Location

Loc Qty

Loc Code

FP-A

233

42807

28

67441

7

68943 ✓

198

m-l 11/08/03

IX  
16  
m-l 11/08/03

16X  
16  
m-l 11/08/03

16X

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DESIGN <i>[Signature]</i>	DRAWN BY <i>[Signature]</i>	<b>DART AEROSPACE LTD</b> HAWKESBURY, ONTARIO, CANADA	
CHECKED <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DRAWING NO. D2580	REV. D SHEET 1 OF 3
DATE 07.02.27		TITLE 205 SKIDTUBE ASSEMBLY	SCALE NTS
A	96.09.16	NEW ISSUE	
B	96.12.02	AS MANUFACTURED	
C	98.08.26	REDRAWN, INCLUDED DEO 9094/9097	
D	07.02.27	CHANGE TO SS WEARPLATES AND GASKETS, INCLUDE DEO 9124/9183	

**RELEASED**  
07.06.28 *[Signature]*

**DEO ATTACHED**

**UNDER REVIEW**

*[Signature]*  
RMV 07.06.30

QTY -041	QTY -045	Part Number	Description
X		D2580-041	SKIDTUBE ASSEMBLY
	X	D2580-045	SKIDTUBE ASSEMBLY
1	1	D2500-1-190	EXTRUSION
1	1	D2576-3	STEP
20	24	D2579	CROSS BOLT SPACER
16	16	D2594-1	PLUG
16	16	D2594-3	O-RING
1	1	D2596	205 WEB
1	1	D2855	AFT CAP
1	1	D3564-5	WEARSHOE
1	1	D3564-9	WEARSHOE
1	1	D3564-11	WEARSHOE
1	1	D3564-13	WEARSHOE
2	2	D3566-1	GASKET
1	1	D3566-5	GASKET
1	1	D3566-13	GASKET
50	50	ALS7-1032-130 or AKS7-1032-130 or AKS4-1032-130 or AELS-1032-130	INSERT
50	50	AN3C4A	BOLT
2	2	AN3-5A	BOLT
50	50	AN960C10L	WASHER
2	2	AN960JD10L	WASHER

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SUBJECT TO AMENDMENT

WITHOUT NOTICE

WORK ORDER

NO. *71948*

*10-07-14*

**GENERAL NOTES:**

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) ALL DIMENSIONS ARE IN INCHES
- 3) INSERT D2596 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241 ADHESIVE PER DART QSI 015 BEFORE BENDING. ENSURE HOLES LINE-UP.
- 4) BEND AS A SMOOTH RADIUS STARTING WITH A MAXIMUM CENTERLINE RADIUS OF 60 AND ENDING WITH A MINIMUM RADIUS OF 30. A MAXIMUM REDUCTION OF 0.200 IN DIAMETER IS ALLOWABLE IN THE BENT PORTION OF THE TUBE.
- 5) USE DART DRILL TEMPLATE TD2577-205 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL ALS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL AN3C4A BOLTS AND AN960C10L WASHERS WITH SIKAFLEX-241/-291.
- 6) WELDING TO BE DONE PER DART QSI 004.
- 7) FINISH:  
SEE NOTES ON  
PAGE 2 FOR D2580-041 AND  
PAGE 3 FOR D2580-045
- 8) INSERT D2594-1 PLUG C/W D2594-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (16 PLACES).

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**Dart Aerospace Ltd**

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

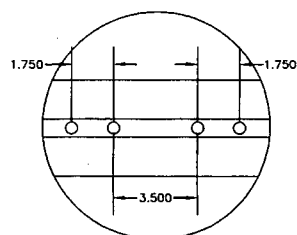
Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

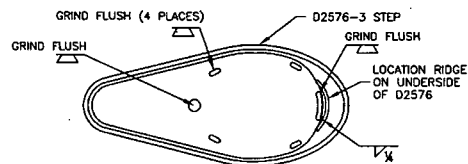
**NOTE:** Date & initial all entries

W/O 71948

DETAIL A  
SCALE 5:24



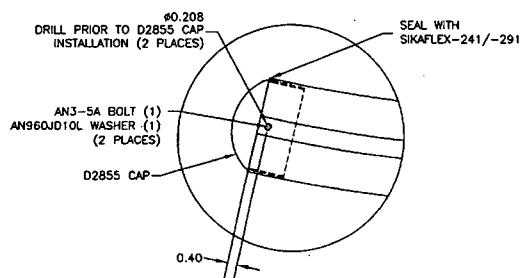
DETAIL B  
SCALE 5:24



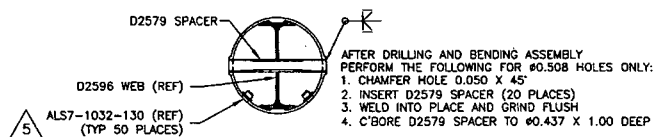
RELEASED  
07.06.28

DEO ATTACHED  
RMV 07.06.30

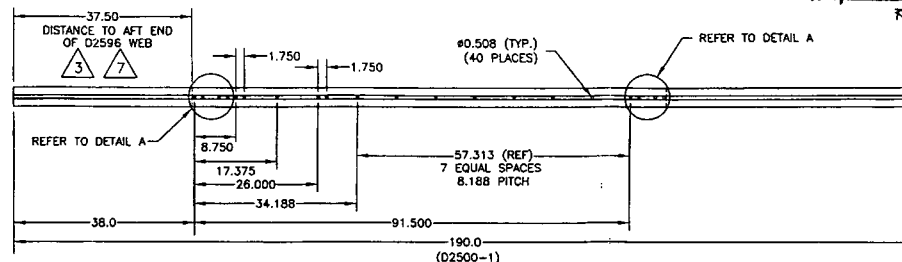
DETAIL C  
SCALE 5:24



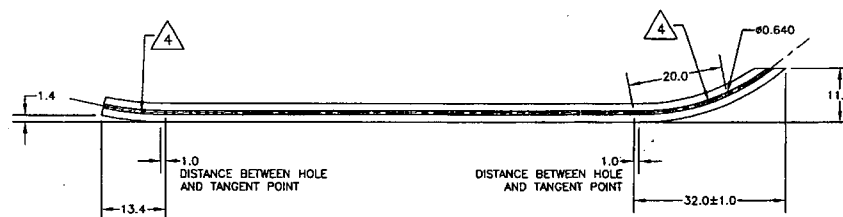
SECTION D-D  
SCALE 5:24



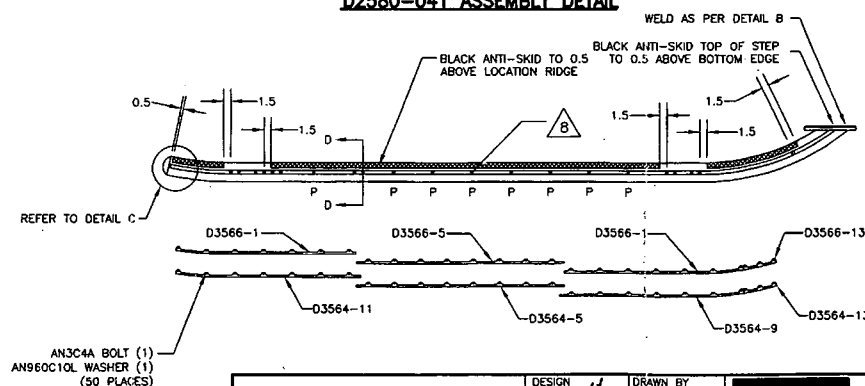
D2580-1 DRILLING DETAIL



D2580-1 BENDING AND CUTTING DETAIL



D2580-041 ASSEMBLY DETAIL



D2580-041 NOTES

- i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB  
POWDER COAT ASSEMBLY GLOSS WHITE (REF. 4.3.5.1) PER DART QSI 005 4.3  
BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

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DATE 07.02.27		DRAWING NO. D2580			SHEET 2 OF 3
		TITLE 205 SKIDTUBE ASSEMBLY			SCALE 1:2

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

RELEASED  
07-06-28

~~DEO ATTACHED~~  
RMV 6/20/30

Technical drawing of a circular component with a central hole and a rectangular slot. The drawing includes dimensions and labels for parts and assembly instructions.

Labels and Dimensions:

- DRILL PRIOR TO D2855 CAP INSTALLATION (2 PLACES)
- #0.208
- SEAL WITH SIKAFLEX-241/-291
- AN3-5A BOLT (1)
- AN960J10L WASHER (1) (2 PLACES)
- D2855 CAP
- SEE NOTE ii)
- 0.40

D2579 SPACER

WEB (REF)

-130 (REF)  
(20 PLACES)

AFTER PERFO

1. CHA
2. INS
3. WEI
4. C'B

AFTER DRILLING AND BENDING ASSEMBLY  
PERFORM THE FOLLOWING FOR Ø0.508 HOLES ONLY:

1. CHAMFER HOLE 0.050 X 45°
2. INSERT D2579 SPACER (20 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C-BORE D2579 SPACER TO Ø0.437 X 1.00 DEEP

i) FINISH: ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2596 WEB POWDER COAT ENTIRE ASSEMBLY GREEN (REF. 4.3.5.8) PER DART QSI 005 4.3 BLACK ANTI-SKID PAINT AS INDICATED PER DART QSI 005 4.4

ii) IT IS ACCEPTABLE TO GRIND A RELIEF IN THE D2855 AFT CAP TO PREVENT INTERFERENCE WITH THE SPACER AT THIS LOCATION

11.06.30  
RMV 11.06.30

[illegible]

Figure 1 is an elevation view of the bridge deck showing dimensions and hole locations. The diagram includes a cross-section of the bridge deck with a central hole and two side holes. Dimensions are given in feet and inches. Key dimensions include: 5.985 (hole radius), 5.338 (REF) (hole spacing), 51.340 (total width), 39.580 (hole spacing), 5.915 (hole radius), 3.630 (REF) (hole spacing), 0.508 (8 PLACES) (hole diameter), 20.0 (hole spacing), 0.640 (hole radius), 1.4 (hole radius), 1.0 (DISTANCE BETWEEN HOLE AND TANGENT POINT), 13.4 (hole spacing), 32.0 ± 1.0 (hole spacing), and 11.5 (hole radius).

[illegible]

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DESIGN

24

CHECKED ☒

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212	213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243	244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	301	302	303	304	305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365	366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396	397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455	456	457	458	459	460	461	462	463	464	465	466
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54

DATE \_\_\_\_\_

07.02.27

**DRAWN BY**

PL

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[illegible]

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**DART**

**DART AEROSPACE LTD.**  
HAWKESBURY, ONTARIO, CANADA

DRAWING NO.

DRAWING NO.  
D2580

02580

TITLE	
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205 SKI

REV. D

REV. 0

SHEET 3 OF 3

SCALE

ASSEMBLY 1:24

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Linda Lacelle

From: dshepherd@dartaero.com  
Sent: April 18, 2011 11:36 AM  
To: Linda Lacelle; Mike Petsche  
Cc: Bill Beckett; 'Chris Provencal'; 'Eric Charbonneau'  
Subject: Re: Alum. Solution Anneal - swaging

Makes sense to me ... We don't want to get caught short ... Make sure that if we do this, they are ident the old CHG number.

David

Sent from my BlackBerry device on the Rogers Wireless Network

From: "Linda Lacelle" <llacelle@dartaero.com>  
Date: Mon, 18 Apr 2011 11:21:10 -0400  
To: 'Mike Petsche' <mpetsche@dartaero.com>; <dshepherd@dartaero.com>  
Cc: 'Bill Beckett' <bbeckett@dartaero.com>; 'Chris Provencal' <cprovencal@dartaero.com>; 'Eric Charbonneau' <echarbonneau@dartaero.com>  
Subject: RE: Alum. Solution Anneal - swaging

I am ready to weld some up, I don't want to get into trouble with L/T's on these, any objections??

From: Mike Petsche [mailto:mpetsche@dartaero.com]  
Sent: April 18, 2011 10:42 AM  
To: 'Linda Lacelle'; dshepherd@dartaero.com  
Cc: 'Bill Beckett'; 'Chris Provencal'; 'Eric Charbonneau'  
Subject: RE: Alum. Solution Anneal - swaging

Well I'm not sure what to say.

It is my understanding that the swaging will still make sense even with the extra hoops we need to jump throu

if there is still uncertainty on the delivery of the material, we CAN still weld them if we need to.

And while this might be less than "world class", couldn't we take some of our tubing that we have in stock and with the welder to knock down the temper a little? Ground clamp on one end, torch on the other.....BZZZZZZ?

(I'm only sort of joking.....because I bet it would work)

From: Linda Lacelle [mailto:llacelle@dartaero.com]  
Sent: April 18, 2011 9:44 AM  
To: dshepherd@dartaero.com; 'Mike Petsche'  
Cc: Bill Beckett; Chris Provencal; Eric Charbonneau  
Subject: RE: Alum. Solution Anneal - swaging  
Importance: High

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



NO. 258

AWS D17.1.2001  
QUALIFICATION TEST RECORD

Name: Barclay Elliot  
Job number: B69986  
Part number: 205-634-041  
Description: 205  
Welding Process: Tig[☒] Mig[ ]  
Base material: Aluminium  
Current: AC[☒] DC[ ]

TEST REQUIREMENTS AND RESULTS

Visual: pass[☒] fail[ ]  
Penetration: pass[☒] fail[ ]

UNACCEPTABLE

Cracks: pass[☒] fail[ ]  
Undercut: pass[☒] fail[ ]  
Pin holes: pass[☒] fail[ ]  
Overlap (cold lap): pass[☒] fail[ ]  
Porosity (surface): pass[☒] fail[ ]  
Coloration: pass[☒] fail[ ]

Qualifier Pat Evans Date of Test Coupon 11.06.24  
Welder Barclay Elliot Date of Test Coupon 11/06/24

The above named individual is qualified in accordance with AWS D17.1.2001 to weld

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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